

DW-SRF 2013 Project
Green Project Reserve Calculation

Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

| | |
|---|------------------------------------|
| SRF PROJECT ID # | 2013-15 |
| 1 Date: | 25-Jul-13 |
| 2 PWSID # | ME0091200 |
| 3 System | Old Town Water District |
| 4 Project Name | Main Replacement Project |
| 5 Location | Stillwater Avenue |
| 6 Engineering Consultant | A.E. Hodsdon |
| 7 Existing Main size, age, and type | 10" cast iron unlined pipe, 1930 |
| 8 Proposed New Water Main size and type | 12" Ductile Iron cement lined pipe |
| 9 New Main Pipe Length | 5,200 |
| 10 Estimated Project Cost | \$ 1,473,048 |

Note: Data from Utilities Annual Report to Maine Public Utilities Commission

| <u>Page</u> | <u>Line</u> | <u>Description</u> | <u>Units</u> | <u>2011 PUC data</u> |
|-------------|-------------|--|---------------------------|-----------------------------------|
| W-12 | 15 | Total Production Water | gallons per year | 352,786,000 |
| W-12 | 17 | Total Revenue Water | gallons per year | 304,004,000 |
| W-12 | 19 | Total Non-Revenue Water | gallons per year | 48,782,000 |
| W-12 | 19 | Percent Non-Revenue Water | | 14% |
| W-12 | 22 | Utility Usage - treatment | gallons per year | 14,000,000 |
| W-12 | 23 | Utility Usage - hydrant flushing | gallons per year | 7,140,000 |
| W-12 | 14 | Utility Usage - bleeders | gallons per year | 1,000,000 |
| W-12 | 26 | Utility Usage - all other (running customers & blow-offs) | gallons per year | 3,000,000 |
| W-12 | 30 | Fire Protection | gallons per year | 200,000 |
| W-12 | 31 | Main Breaks | gallons per year | 1,000,000 |
| W-12 | 35 | Flushing Mains | gallons per year | 2,800,000 |
| W-12 | 36 | Total Accounted for Non-Revenue Water | gallons per year | 29,140,000 |
| W-12 | 37 | Total Unaccounted Non-Revenue Water | gallons per year | 19,642,000 |
| | | Estimated Water Loss From ALL Breaks, Leaks, & Bleeders | gallons per year | 27,442,000 |
| | | <i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i> | | |
| | | % of Water Loss of Total Production Water | | 8% |
| | | <i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i> | | |
| W-9 | 9 | Total Transmission Mains | feet | 8,458 |
| W-9 | 23 | Total Distribution Mains | feet | 229,844 |
| | | Total Mains in Service | feet | 238,302 |
| | | | miles | 45 |
| | | <u>Estimated Distribution System Losses:</u> | | |
| | | Loss Water per mile of pipe | gallons per mile per year | 608,026 |
| | | Loss Water per foot of pipe per year | gallons per foot per year | 115 |
| | | Loss water per foot of pipe per day | gallons per foot per day | 0.32 |
| | | <u>Water loss will vary with age of water main - assume Straight line projection as follows:</u> | | |
| | | 0 to 25 year old pipe | 0 % of Total Loss | gallons per mile per year - |
| | | 26 to 50 year old pipe | 10% of Total Loss | gallons per mile per year 60,803 |
| | | 51 to 75 year old pipe | 30% of Total Loss | gallons per mile per year 182,408 |
| | | over 75 year old pipe | 60% of Total Loss | gallons per mile per year 364,815 |
| | | | All Losses: | 608,026 |
| | | Age of Main to be replaced | years | 100 |
| | | Length of Main to be Replaced | mile | 0.98 |
| | | CALCULATED WATER LOSS - FOR PROPOSED PROJECT | gallons per year | 179,644 |
| W-2 | 29c | Total PRODUCTION COST of Water | \$/year | \$ 907,059 |
| W-12 | 15 | Total Production Water | 1,000 gallons per year | 352,786 |
| | | Production Cost of Water | per 1,000 gallons | \$ 2.57 |
| | | PROJECTED ANNUAL VALUE of WATER LOSS | per year | \$ 462 |

| | | |
|---|-----------|------------------|
| Annual Savings | \$ | 462 |
| PV Factor (uniform series present worth factor (1%, 75 years): | \$ | 52.587 |
| Present Value of Savings over Economic life of pipeline: | \$ | 24,289 |
| Project Cost | \$ | 1,473,048 |
| PV Percent of Project Cost: | | 2% |
| ESTIMATED % Green | | 2% |
| \$ Amount Green | \$ | 24,289 |